A New Species of *Alvania* (Rissoidae) from the West Indian Region

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ABSTRACT

Alvania (*Alvania*) *colombiana* new species was found from 45 to 261 m (24 to 143 fms) depths off the Caribbean coast of Colombia to South Florida, the Gulf of Mexico, and Puerto Rico. *Alvania colombiana* differs from *Rissoa xanthias* (Watson, 1886), in having a protoconch with a single spiral zig-zag line of tiny nodules just above the suture, and by its smaller shell size. *Alvania colombiana* also differs from *Rissoa precipitata* (Dall, 1889), by its protoconch and size.

INTRODUCTION

Exploration of the deep sea a century ago was the equivalent of the space age today. The famous "Challenger" expedition sampled two offshore stations in the tropical western Atlantic in which small mollusks were numerous. These were described by Watson (1886). Among the Rissoidae were two species, *Rissoa pyrrhias* (Watson, 1886) and *Rissoa xanthias* (Watson, 1886), that were similar in size and shape. Dall (1889), reporting on the "Blake" material, described two more species of *Rissoa*, *Rissoa acuticostata* and *Rissoa precipitata*. *Rissoa acuticostata* was similar to *Rissoa xanthias*, and finally Dall (1927) acknowledged that with more specimens it was impossible to separate the material into two species. *Rissoa precipitata*, on the other hand, is known principally from the original description and illustration.

There is another small western Atlantic rissoid which at first glance appears similar to the illustration of *Rissoa precipitata*. However, there are a number of features that differentiate them. Size is one: the small species has an average adult size of 1.2 mm while *Rissoa precipitata* (holotype) has an adult size of 3.92 mm. Protoconch is the other: the small species has a projecting protoconch while *Rissoa precipitata* has a depressed protoconch. One of us (D.R.M.) had obtained specimens of the small species during the MAFLA (Mississippi, Alabama, and Florida) study (1974 to 1975) in the eastern Gulf of Mexico. This small species was first reported by one of us (N.S.R.) as *Alvania* sp. 1 (see literature cited; Rodriguez, 1983).

ABBREVIATIONS

USNM = National Museum of Natural History, Smithsonian Institution.
FSBS I = Florida Department of Natural Resources, Marine Research Laboratory, St Petersburg.
MCZ = Museum of Comparative Zoology, Harvard University.
UMML = University of Miami Marine Laboratory.
CNMS = Colombian Natural Museum of Science, National University, Bogotá

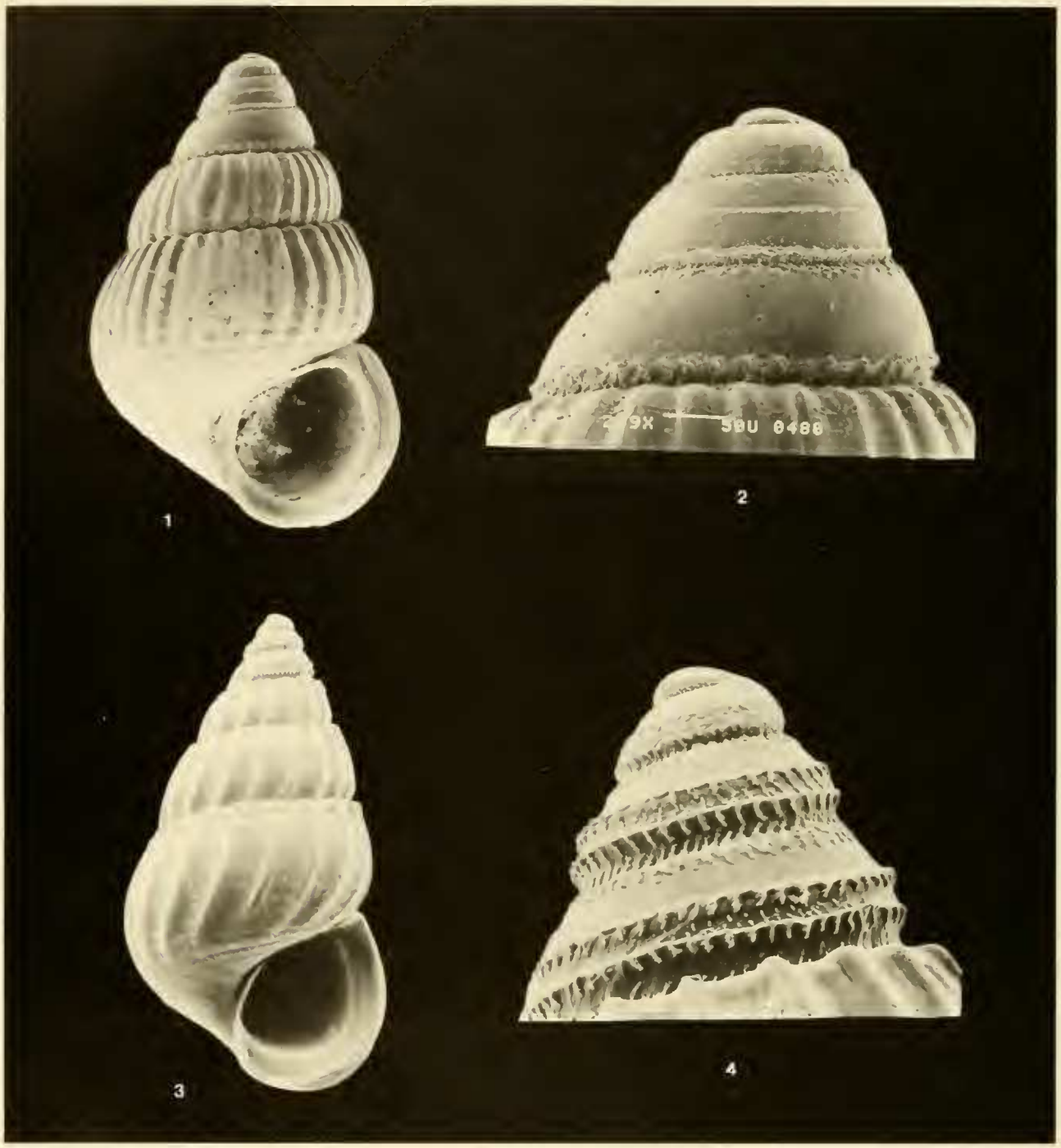
MATERIALS AND METHODS

All the specimens to be photographed in the SEM were cleaned in 100% sodium hypochlorite for 2 minutes, then rinsed in distilled water twice. If the specimens still showed residual material (*e.g.*, sand grains), they were sonicated for 60 seconds. Finally, the specimens were air dried and put on a SEM stub with double-sided Scotch tape.

Alvania (*Alvania*) *colombiana* new species (figures 1, 2)

Description: Shell 1.0 to 1.3 mm in length. Protoconch multispiral, glossy, light brown, with 3½ whorls that are sculptured with 1 spiral zig-zag line of tiny nodules just above the suture and 1 undulating line of the same nodules in the middle of the whorl. Nodules irregularly arranged over entire protoconch. Teleoconch of approximately 2 whorls, with numerous axial ribs. Adult shell translucent, very light brown in color.

Axial ribs slightly curved, 26 ribs on the body whorl fading out on the base of the shell. Body whorl with a narrow spiral groove just below the suture and another 7 to 9 grooves between the periphery of the final whorl and the base of the shell. Varix terminal with a narrow extension forming outer lip of semilunate aperture. Some specimens weakly umbilicate.



Figures 1, 2. *Alvania colombiana* new species. **1.** Holotype, USNM number 859339, 1.28 mm in length. **2.** Protoconch, 280 ×. **Figures 3, 4.** *Rissoa xanthias* (Watson, 1886), from off Miami, in the junior author's collection, 2.26 mm in length. **4.** Protoconch, 220 ×.

Type locality: Off the west coast of Florida at 29°35′N, 87°20′06″W, depth 107.3 m.

Holotype: USNM number 859339. Length, 1.28 mm. Width, 0.78 mm.

Paratypes: One from off the west coast of Florida at 29°35′N, 87°20′06″W, depth 107.3 m, USNM number 859340; 2 from off the west coast of Florida at 28°24′N, 85°15′06″W, depth 164.6 m, FSBC I number 33113; and off the west coast of Florida at 29°49′30″N, 86°25′30″W, depth 82.3 m, FSBC I number 33114; 2 from off Puerto Rico at 17°53′24″N, 66°35′10″W, depth 221 m, MCZ number 297220; and off Miami at 25°47′N, 80°01′30″W, depth 137 m, MCZ number 297219; 2 from off Miami

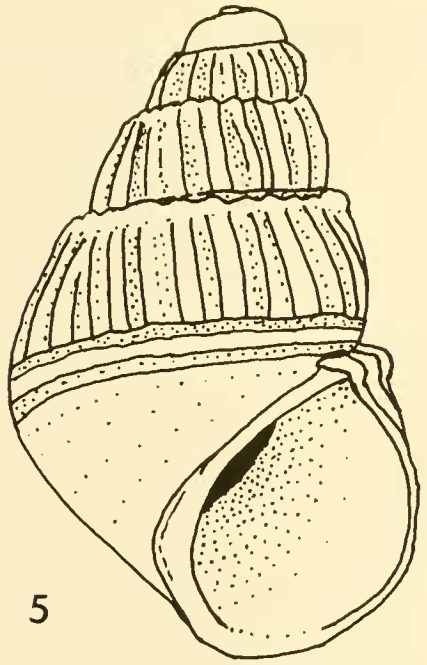


Figure 5. Drawing of *Alvania precipitata* (Dall, 1889), holotype, MCZ 7470, 3.92 mm in length.

at 25°47′N, 80°01′30″W, depth 137 m, UMML number 8349; and off Miami at 25°46′30″N, 80°00′08″W, depth 76.81 m, UMML number 8350; 2 from off the Caribbean coast of Colombia at 09°52′35″N, 75°47′25″W, depth 72 m, CNMS number ICN-MHN(MO)522; and off Miami at 25°46′30″N, 80°00′08″W, depth 76.81 m, CNMS number ICN-MHN(MO)523.

Distribution: This species was found in 31 samples from off the Caribbean coast of Colombia collected between 1979 and 1981. The specimens were found at depths ranging from 45 m to 261 m, but were most abundant at depths between 65 m and 160 m. Other specimens of this species were found from off the west coast of Florida, off southern Puerto Rico, and the Straits of Florida east of Miami. The bottom in almost all cases consisted of sandy mud. The species is probably found in these depths throughout the Caribbean, the southern and eastern Gulf of Mexico, and the Bahamas. All the specimens were found dead.

Discussion: *Alvania colombiana* appears to be a common widespread species throughout the Caribbean and adjacent areas. This is a very small compact species that should not be confused with any other in its range. Some features, however, are lacking or lost on the protoconch of some specimens. These include the fine nodules distributed all over the protoconch, and the undulating line of nodules on the periphery. These features are seen only under high magnification, so are difficult to observe for routine identification. Details of the teleoconch sculpture, however, should be easy to make out under low power, even in a somewhat worn specimen.

Alvania colombiana has been confused with *Rissoa precipitata* (Dall, 1889) (figure 5). This was due to the fact that specimens of *Rissoa precipitata* were not available for comparison. The holotype and only known specimen, MCZ 7470, is a thin shell with no terminal varix. In fact, the sculpture fades away almost completely on the last half whorl (except for the sub-sutural tubercles). The protoconch is of the form seen in gastropods without a planktonic larval stage: large, rounded, unsculptured, and with a smooth transition from protoconch to teleoconch. The type locality is Yucatan Strait at a depth of 640 fathoms (not 670 as is given by Dall, 1889:280).

Another similar species is *Rissoa xanthias* (Watson, 1886) (figures 3 and 4). It, however, is about twice the size, has just over half as many axial ribs, and has a different and very distinctive protoconch. In this species the protoconch has 3½ whorls, in which the sutures are deep and ornamented with a line of spirally arranged vertical pustules. Just above the suture there is a wide canal whose edges are formed by an undulating line with vertical pustules equally spaced and directed downward. Each canal also has in the middle dots and small nodules randomly distributed. Watson reported it from Challenger Sta. 24 off Culebra Island, 18°38′30″N, 65°05′30″W, depth 715 m, and from Sta. 122, 9°10′S, 34°49′W to 34°53′W, depth 640 m.

Finally, *Rissoa pyrrhias* (Watson, 1886) is another similar species. It is slightly larger than *Rissoa xanthias*, and its spiral grooves are not confined to the base of the shell. According to Watson (1886), the protoconch has 2½ whorls which are scored with coarse but feeble spiral threads.

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